

1 A series consists of a sequence with the "+" symbol. True or False

True

False

3 The equation below in expanded form is $7 + 10 + \dots + (3n + 4)$. True or False

True

False

$$\sum_{i=1}^n (3i+4)$$

5 For the following series, which numbers are not one of the first four terms? $[(2n + 1)/(2n - 1)]$ Multiple answer

- A 4/3
- B 7/5
- C 9/7
- D 5/7

7 Find the sum of the first 20 terms of this sequence. 1, 3, 5, 7 Multiple choice

- A 200
- B 400
- C 450
- D 600

9 How many terms must be added together for this geometric series to equal 728? $2 + 6 + 18 + \dots$ Multiple choice

- A 6
- B 8
- C 9
- D 12

2 Which symbol is used to write a series in abbreviated form? Multiple choice

- A Σ
- B ζ
- C Φ
- D ξ

4 For the sequence $(4n - 3)$, what are the first four terms? Multiple choice

- A 1, 5, 9, 13
- B 1, 6, 10, 13
- C 1, 5, 10, 14
- D 0, 5, 9, 13

6 What is the tenth term of this sequence? 2, 5, 8 ... Multiple choice

- A 26
- B 22
- C 29
- D 17

8 For a geometric sequence, the ratio of a number over its previous number is called the *common ratio*. True or False

True

False

10 What is the next number in this series? $1 - (1/2) + (1/4) - (1/8) + \dots$ Multiple choice

- A (1/16)
- B (1/4)
- C (1/2)
- D (1/32)

- 11 What is the sum of the first 20 terms of the arithmetic series shown below?

$$4 + 7 + 10 + \cdots + 61$$

- A 610
- B 650
- C 1,220
- D 1,300

- 13 What is the sum of the first 10 terms of the arithmetic series shown below?

$$7 + 5 + 3 + \cdots$$

- A -20
- B -10
- C 20
- D 50

- 15 What is the sum of the first 10 terms of the geometric sequence shown below?

$$4 + 8 + 16 + 32 + \cdots$$

- A 130
- B 1,024
- C 2,048
- D 4,092

- 17 What is the sum of the series shown below?

$$2 + 1 + \frac{1}{2} + \frac{1}{4} + \cdots$$

- A 4
- B 3
- C 2
- D 1

- 19 Which formula can be used to find the partial sum, S_n , of an arithmetic series?

A $S_n = \frac{n}{2}(a_1 + a_n)$

B $S_n = \frac{a_1 - a_1 r^n}{1 - r}$

C $S_n = a_1 + (n - 1)d$

D $S_n = \frac{a_1}{1 - r}$

12 Find $\sum_{k=1}^5 5k$.

- A 25
- B 30
- C 75
- D 150

- 14 Each row of seats in an auditorium contains 1 more seat than the previous row. The first row contains 5 seats. What is the total number of seats in 100 rows?

- A 500 seats
- B 2,770 seats
- C 5,450 seats
- D 10,900 seats

16 Find $\sum_{k=1}^5 3^k$.

- A 243
- B 363
- C 726
- D 729

- 18 A flea jumps toward a dog that is 1 meter away.

The length of the flea's first jump is 40 cm.

The length of the flea's second jump is 24 cm.

After five jumps, what is the distance between the flea and the dog?

- A more than 10 cm
- B between 9 cm and 9.99 cm
- C between 8 cm and 8.99 cm
- D less than 7.99 cm

- 20 Which formula can be used to find the partial sum, S_n , of a geometric series?

A $S_n = \frac{n}{2}(a_1 + a_n)$

B $S_n = \frac{a_1 - a_1 r^n}{1 - r}$

C $S_n = a_1 + (n - 1)d$

D $S_n = \frac{a_1}{1 - r}$